LOCAL AGENCY PERSPECTIVE: PLANNING AND IMPLEMENTING FIRSTNET LTE INTO COUNTYWIDE PUBLIC SAFETY

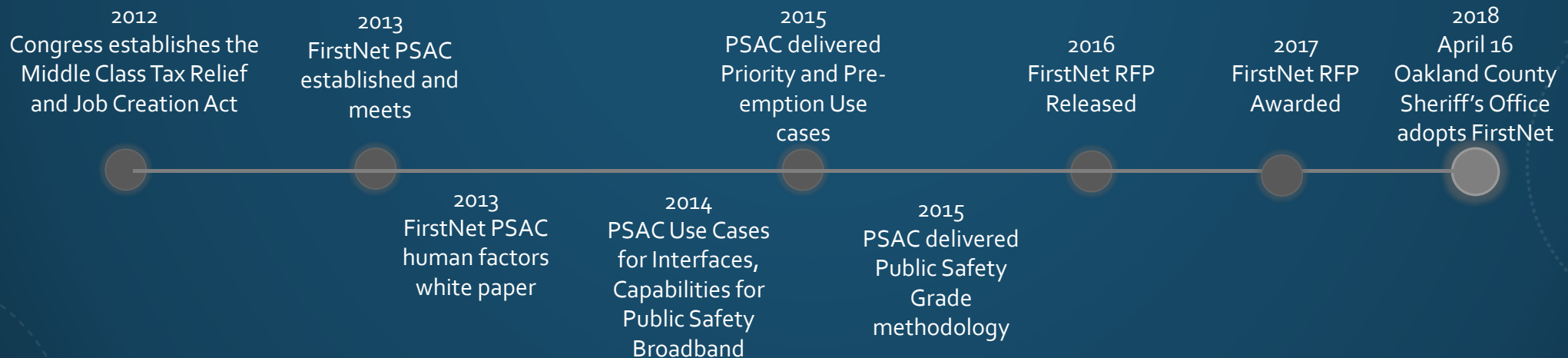2019 MICHIGAN INTEROPERABLE COMMUNICATIONS CONFERENCE

FirstNet HISTORY

D block efforts to establish a nationwide network for public safety broadband. Coalition members include police/fire/EMS associations and state and local governments, as well as regional and statewide radio managers.

The 2012 legislation included the establishing of an "Authority" who would independently manage the development, deployment, use, and such things as cyber security, credentialing, applications, coverage, grade of service, and benchmarks/requirements of vendor selected for the partnership.

A timeline of the actions leading up to Oakland County Sheriff's adoption of FirstNet

2012
Congress establishes the Middle Class Tax Relief and Job Creation Act

2013
FirstNet PSAC established and meets

2013
FirstNet PSAC human factors white paper

2014
PSAC Use Cases for Interfaces, Capabilities for Public Safety Broadband

2015
PSAC delivered Priority and Pre-emption Use cases

2015
PSAC delivered Public Safety Grade methodology

2016
FirstNet RFP Released

2017
FirstNet RFP Awarded

2018
April 16
Oakland County Sheriff's Office adopts FirstNet

STATE OF MICHIGAN PUBLIC SAFETY BROADBAND

Michigan FirstNet Video

The State of Michigan dedicated team members to work with state and local public safety to evaluate the need for Public Safety Broadband, the ability of the selected vendor to provide coverage, capacity, grade of service, and support to law enforcement, fire, and EMS personnel. There was also a need to ensure fair pricing, contract vehicles for local use, direct access to customer data and network performance (outages and any decline of services).

Michigan's Public Safety Broadband Workgroup

The MiPSB Workgroup is established under Michigan's Public Safety Communications Interoperability Board (MPSCIB), the State's Interoperable Governing Board. The Workgroup is comprised of a cross-functional, geographically diverse team that include representation from local, state, and tribal entities. Its purpose is to gather, analyze, and disseminate information relevant to the activities of FirstNet, and aggregate the information into recommendations for the MPSCIB.

MiPSB
Michigan's Public Safety
Broadband Program

STEP 1:HOW DO WE CURRENTLY USE LTE SERVICES?
(WHERE DO WE CURRENTLY USE LTE SERVICES?)

- Mobile Data Computers (MDC)
  - Modems configured for current carrier (Not FirstNet)
- Handheld Android and Apple smartphones
  - Multiple carriers
- Handheld Android and Apple smartphones with PTT application
  - LMR interfaced 107 devices, 1 talkgroup
- MiFi
  - Multiple carriers
- Wireless modems configured for backup CAD, PC's, video feed from Mobile Command Vehicle
- SWAT Team use for tactical robot, UAV, and situational awareness application
- Aviation Unit video downlink (microwave) then using an edge server pushed out to a secure web accessible via LTE
- **COVERAGE, COVERAGE, COVERAGE**
  - **If you don't know - do coverage testing. This is due diligence and the responsibility of the agency. Coverage maps are a best guess based upon technical conditions, most likely they are accurate, however-find out if gaps exist and where they exist.**

HOW DO WE ANTICIPATE USING LTE?

- Encrypted communications
  - Voice and data
- CJIS data
  - CJIS Compliant
  - Credentialing/Authentication
- Higher bandwidth throughput for HD video and multiple streaming sources
- Location Based Services (LBS)
- Applications
  - Mapping, video streaming, LBS, incident management, collaboration tools, CAD, emergency notification, backup to traditional network services
- Network privileged access over public users
- Continuing the LMR and LTE convergence – enhancing both services by working together

DECISION POINT

- Does your equipment support FirstNet vendor bandwidth? Modems, handheld smartphones, specialty devices such as robot, UAV, other field based instruments…

- Does your current contract vehicle allow you to move telephone numbers and data plans without penalty?

- Does the cost of the FirstNet plan burden other agency or community devices with additional costs when they leave the current plan?

- Is the FirstNet plan cost effective for your data needs?

- Does FirstNet coverage exist where you use LTE today?

- Does FirstNet coverage exist where you plan to use LTE in the future?

STEP 2: MEET WITH VENDORS, SUPPORT PERSONNEL, PURCHASING, & FINANCE

- January 2018 - We met with purchasing and telephone support personnel to identify current devices that may benefit from FirstNet service.

  - Information Technology purchases phones, service plans, and provides limited support to all county devices. Sheriff's Office does not purchase and own many of the devices, bills are paid to the "County IT" monthly.

  - Data and text plans are pooled through a third party who receives billing information directly from the current vendor. A reduction in pooled plans may impact cost to other County departments.

  - Contracts had limited data plans and costs were negotiated by the County directly with the vendor.

- A limited move of LTE mobile devices utilizing PTT application (LMR Interfaced) was determined to be our first step.

  - 107 Apple devices were transferred to FirstNet Customer Service Portal

    - Managed by Sheriff's Office

    - Limited MDM

    - Device use and management is now handled directly by Sheriff's Office

STEP 3: MEET WITH FIRSTNET SOLUTION TEAM MEMBERS

- ATT FirstNet team members can identify solutions as well as recommend services or products that meet the needs you have identified.

- Contracting and support are much different than in the past.

- Dedicated FirstNet support 24x7, not the usual customer support call.

- Dedicated network monitoring of FirstNet at the Global Network Operations Center- ask about this!

- FirstNet Authority manages the award to ATT, determines performance and evaluates continually.

- FirstNet Authority has legally mandated requirements (its in the law) that ATT must adhere to.

- ATT has made a commitment to Public Safety by deploying Band 14 spectrum nationwide, additionally opening up their entire network to FirstNet users, and is meeting and exceeding all performance areas mandated in the legislation and by the FirstNet Authority.

- ATT FirstNet can share with you the benefit of a dedicated physical core network for First Responders exclusive use, how FirstNet Authority and its PSAC provide advice and guidance to ATT FirstNet buildout.

APRIL 18, 2018
Oakland County Sheriff's Office is utilizing the FirstNet core for public safety broadband
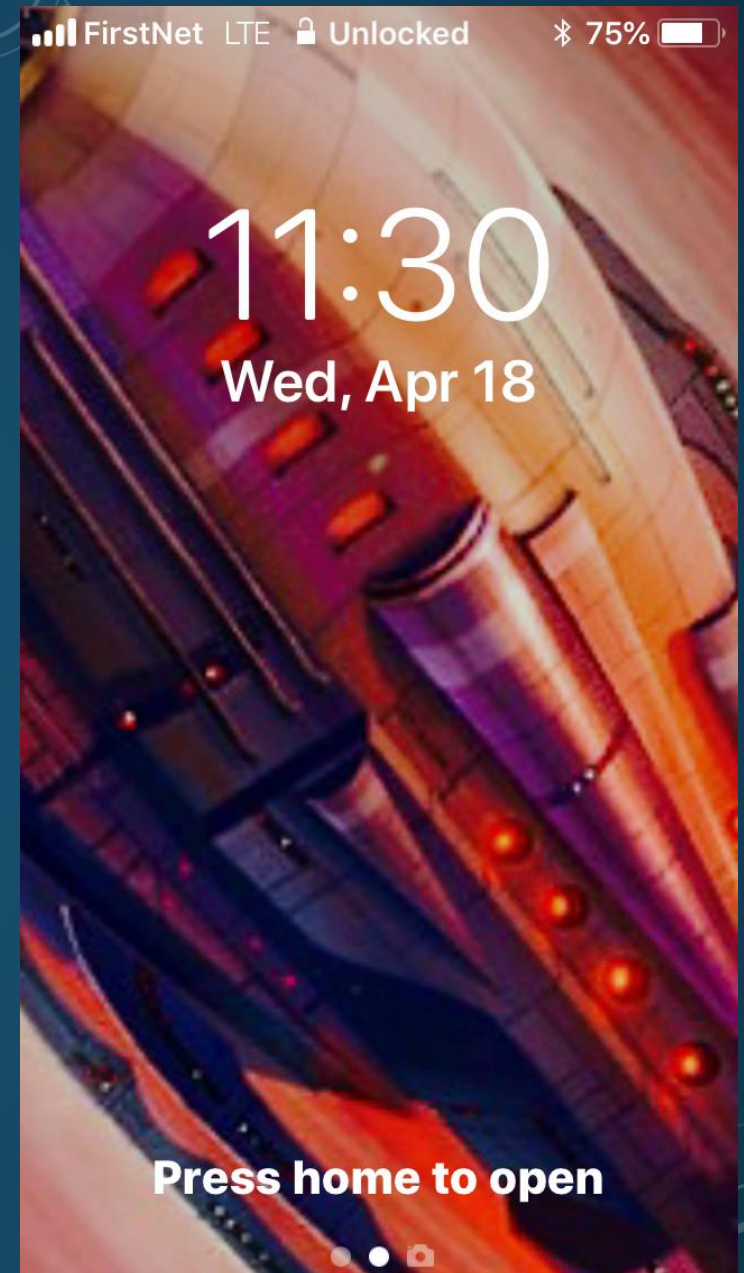
INITIAL ROLLOUT – ANY ISSUES?

- The porting of the numbers and devices over to FirstNet was without incident.

- Current vendor and FirstNet vendor coordinated the move and the customer portal was brought online with little interruption.

- SIMs were exchanged

- LMR LTE interface was reprogrammed

- Customer Tool was accessed directly by Sheriff's Office personnel for the first time
  - MDM capability
  - User logs

- 20% savings in monthly plan costs

- Coverage was no different than what was identified by our testing

- Certain applications (Apple Watch, WiFi Calling) were not available to users.

UPDATE: PATROL VEHICLES MOVED TO FirstNet SERVICE

Sonim XP5s installed in approximately 200 vehicles

CradlePoint Modems moved to FirstNet

FIRST RESPONDERS USE LTE LMR INTERFACE

We purchased an additional LMR Interface to add a second talkgroup to devices on FirstNet . All patrol vehicles now have a separate LMR interfaced talkgroup that can be used anywhere in the event the LMR system is unavailable.

Barriers to interoperability may include device or carrier specific applications. However, FirstNet is based upon technology that allows cloud-based solutions to be agnostic, and server based solutions are only limited by the company or agency providing the access.

NXU-2A Simple Drawing:

Network
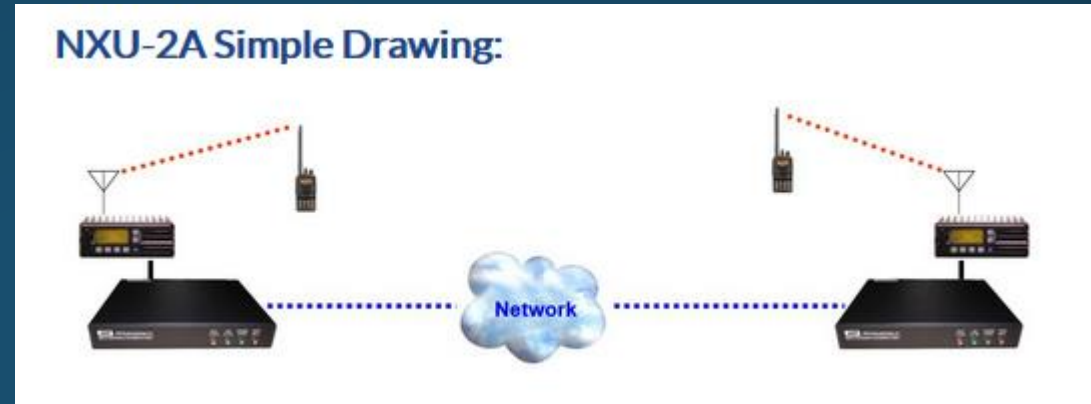
TWO MOBILE RADIOS WERE INTERFACED TO (2) JPS NXU DEVICES

(1) – DUAL INPUT CRADLEPOINT MODEM ON FirstNet PROVIDES CONNECTIVITY

PSAP ADDS 20 SONIM DEVICES TO BACKUP 911 SYSTEM

The Sheriff's Operations Center added 20 Sonim XP5s devices into another layer of redundancy as well as its "Abandon PSAP plan".

1. Motorola CallWorks System CPE

2. Motorola/Polycom Phone

3. InDigital MEVO

4. Local POTs to Nortel System

5. Sonim XP5s ATT service

*Not on FirstNet plans currently. Minute based plan still being negotiated.

PERSONAL PHONES OR BYOD; Public Safety

- YES

- Device is capable of FirstNet (ATT) Cellular

- Public Safety

  - Fire, EMS, Law Enforcement, Emergency Management, and PSAPs

  - Authorized by Agency

- Volunteer Police and Fire - associated to a primary user public safety agency

- Existing customer- migrate and plan consolidation available

- One personal phone for any public safety even if they have an agency issued phone

- NO

- Device is not FirstNet ready

- Not Public Safety

- Department policy restricts

- Cannot provide credentials to ATT

PRIMARY EXTENDED USERS- Who is using FirstNet, who is allowed to use FirstNet?

- YES
- Those that assist in mitigation, remediation, overhaul, cleanup and restoration to emergency services during or after an emergency.
- Utility
- Transportation
- Health Care

- NO
- Family of first responders
- Friends of first responders
- Retired public safety

IMPACT TO GRADE OF SERVICE – PRIMARY AND EXTENDED PRIMARY USERS

Customer tool on FirstNet
- Impacts to coverage
- Service interruptions
- Network disruption
- Uplift Tool-Elevating privileges

Mobile Device Management
- Remote erase
- Temporarily interrupt services
- Control applications downloaded and use

CONSIDERING FIRSTNET SERVICES?

- Current vendor provides superior coverage

- Current vendor provides support at the level necessary

- Current vendor has reduced costs, has implemented a new public safety "no reduction of service" policy, and offering WPS or other service at no additional cost

- Current vendor established a virtual system to manage public safety

- Current vendor has been a good partner to your agency

- Changing vendors requires the changing of equipment

- Certain applications and services will only run on the current vendors network

- Exclusive Band 14 spectrum isn't available today in your area

- Current vendor has contracts that cannot be broken without penalty

LMR VS LTE

LMR systems are not ready to be replaced by LTE and FirstNet

Continued funding and sustainment of your current LMR system is essential to providing public safety grade communications

Investment into new LMR equipment and system upgrades must continue for all public safety users in Michigan

Prepare for the integration of LTE into LMR, continue to deploy P25 LMR

Diverse communication paths are to the benefit of the Public Safety user- consider how the convergence (JPS interop, ISSI) can assist in your mission

QUESTIONS

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- Emergency Communications & Operations Division

- Oakland County Sheriff's Office

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